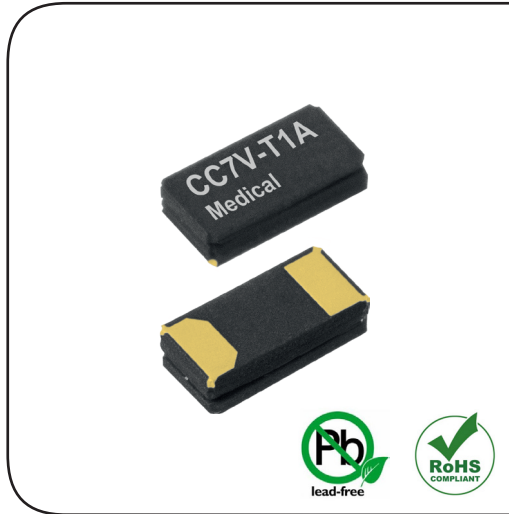
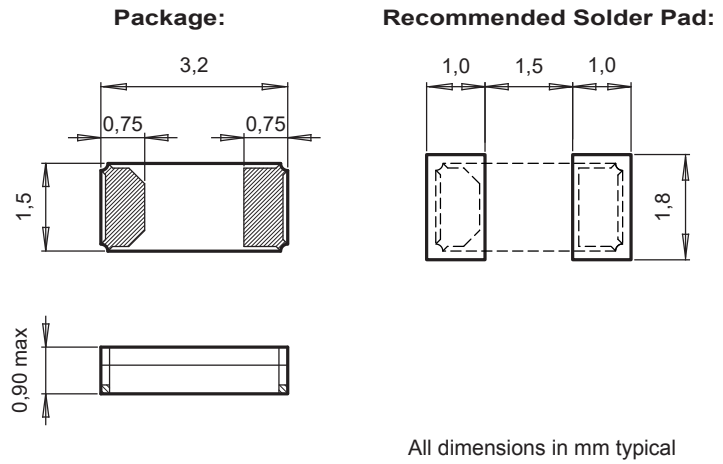


CC7V-T1A Medical

Tuning Fork Crystal 32 kHz – 100 kHz



DIMENSIONS



APPLICATIONS

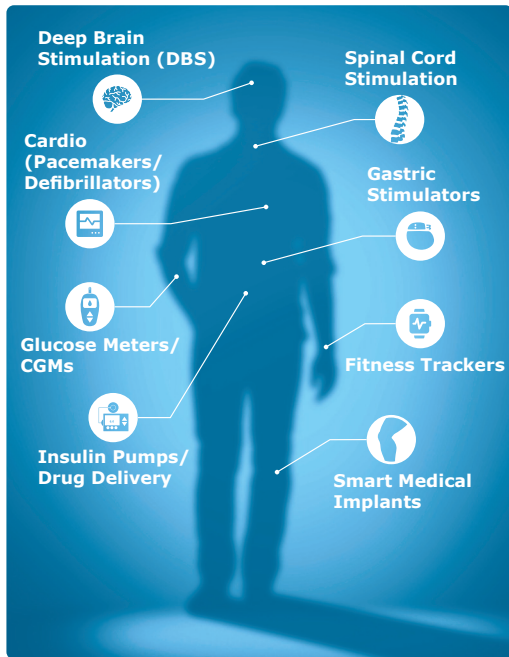
Pacemakers
Defibrillators
Neurostimulators
Cardiac Monitoring Devices
Implantable Drug Delivery Pumps
Infusion Pumps
Cochlear Implants
Smart Orthopedic Implants

DESCRIPTION

The CC7V-T1A Medical Tuning Fork Crystal is manufactured specifically for use in implantable medical devices. Micro Crystal's long history in supplying medical grade timing devices ensures that the CC7V-T1A Medical is produced in accordance with the highest quality production technologies. Long-term reliability is of utmost importance (Class III Implantable) and a hallmark of Micro Crystal's entire medical implantable grade portfolio.

MEDICAL IMPLANTABLE KEY FEATURES

- Safe for Helium environment: Ceramic lid with gold-tin preform-seal for best long-term hermeticity and stability
- Proprietary manufacturing and testing processes
- Long-term aging stability
- Extended operating temperature range: -55°C to +125°C
- Customer specific testing/screening on request
- Components and manufacturing traceability records retained
- Small size, low profile, lightweight (12.5 mg)



ELECTRICAL CHARACTERISTICS AT 25°C

Standard Frequencies	¹⁾ F _L	32.000 / 32.768	100.000	kHz
Load capacitance	¹⁾ C _L	4.0 / 7.0 / 9.0 / 12.5		pF
Frequency tolerance	²⁾ ΔF/F	±20		ppm
Series resistance typ./max.	R _S	50 / 70	15 / 20	kΩ
Motional capacitance typ.	C ₁	3.7	1.3	fF
Static capacitance typ.	C ₀	1.2	0.9	pF
Drive level max.	P	1.0		μW
Insulation resistance min.	R _i	500		MΩ
Aging first year max.	ΔF/F	±2		ppm
Turnover temperature	T ₀	25 ±5		°C
Frequency vs. temperature	ΔF/F ₀	-0.035 ppm/°C ² (T - T ₀) ² ±10%		ppm

1) Other frequencies and load capacitances on request.

2) Other frequency tolerances on request.

STANDARD FREQUENCIES

Frequencies		
32.000 kHz	32.768 kHz	100.000 kHz
Other frequencies on request		

ENVIRONMENTAL CHARACTERISTICS

		Conditions	Max. Dev.
Storage temperature range		-55 to +125°C	
TA Operating temperature range		-40 to +85°C	
TB Extended oper. temp. range		-40 to +125°C	
TC Extended oper. temp. range		-55 to +125°C	
Shock resistance	ΔF/F	5000 g, 0.3 ms, ½ sine	±5 ppm
Vibration resistance	ΔF/F	20 g / 10–2000 Hz	±5 ppm

TERMINATIONS AND PROCESSING

Type	Termination	Processing
CC7V-T1A	Au flashed pads	IPC/JEDEC J-STD-020C 260°C / 20 - 40 s
CC7V-T2A	SnPb plated pads available only on request	
CC7V-T5A	ENEPIG plated pads	

ORDERING INFORMATION

C C 7 V - T 1 A 32.768 kHz 12.5 pF ±20 ppm TA QM

Ceramic package _____

Ceramic lid _____

Package size _____
7 = 3.2 x 1.5 x 0.90 mm

Tuning fork _____

SMT Package _____

Pads _____
1 = Au flashed pads
2 = SnPb plated pads on request
5 = ENEPIG plated pads

Pads on both ends _____

Frequency F_L _____

Load capacitance C_L _____
4.0 pF
7.0 pF
9.0 pF
12.5 pF
Other C_L on request

Frequency tolerance _____
±20 ppm
Other freq. tolerances on request

Temperature range _____
TA = -40 to +85°C
TB = -40 to +125°C
TC = -55 to +125°C

Qualification _____
QM = Medical Grade

A unique part number will be generated for each product specification, i.e:	
20xxxx-MG00	yyy pcs (in 12 mm tape on 7" reel)
20xxxx-MG01	1'000 pcs (in 12 mm tape on 7" reel)
20xxxx-MG03	3'000 pcs (in 12 mm tape on 7" reel)

All specifications subject to change without notice.



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